PHILIPS DK 92

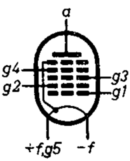
HEPTODE for use as frequency changer in battery sets
HEPTODE pour l'utilisation en changeuse de fréquence dans des appareils batterie
HEPTODE zur Verwendung als Mischröhre in Batteriegeräten

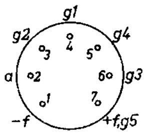
Heating:	direct by battery current, rectified A.C. or D.C.; series or parallel supply
Chauffage:	direct par courant batterie, C.A. redressé ou C.C.; alimentation en série ou en parallèle
Heizung:	direkt durch Batteriestrom, gleichgerichteten Wechselstrom oder Gleichstrom; Serien- oder Parallelspeisung

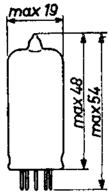
Parallel supply:
Alimentation en parallèle:
Parallelspeisung:
V_f = 1,4 V
I_f = 0,050 A

Series supply:
Alimentation en série:
Serienspeisung:
V_f = 1,3 V

Dimensions in mm
Dimensions en mm
Abmessungen in mm





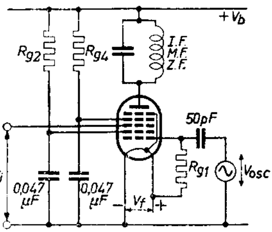


Base, culot, Sockel: MINIATURE

Capacitances / Capacités / Kapazitäten				
	C_a	= 8,4 pF	C_{ag2}	< 0,3 pF
	C_{g3}	= 7,5 pF	C_{ag1}	<0,11 pF
	C_{g2}	= 4,8 pF	C_{g1g3}	< 0,2 pF
	C_{g1}	= 3,9 pF	C_{g1g2}	= 3,0 pF
	C_{ag3}	<0,36 pF	C_{g2g3}	= 1,6 pF

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Operating characteristics with separate excitation
Caractèristiques d'utilisation à excitation séparée
Betriebsdaten mit Fremderregnung



V_b [1]	=	41	63,5	85	V
V_a	=	41	63,5	85	V
V_{g4}	=	41	63,5	60	V
V_{g3}	=	0	0	0	V
V_{g2}	=	29	30	30	V
V_{osc}	=	2,5	4	4	V_{eff}
R_{g4}	=	0	0	180	kΩ
R_{g2}	=	6,8	22	33	kΩ
R_{g1}	=	27	27	27	kΩ
I_a	=	0,25	0,70	0,65	mA
I_{g4}	=	0,09	0,15	0,14	mA
I_{g2}	=	1,75	1,55	1,65	mA
I_{g1}	=	80	130	130	µA
S_c [2]	=	180	300	325	µA/V
S_c (V_{g3}=-2,9V)	=	1,8			µA/V
S_c (V_{g3}=-4V)	=		3,0		µA/V
S_c (V_{g3}=-6V)	=			3,25	µA/V
R_i	=	0,75	0,9	1,0	MΩ
R_{eq}	=	115	120	100	kΩ

[1]) Based on a battery voltage of 45, 67.5 or 90 V reduced by the neg. bias for the output valve.
Se basant sur une tension de batterie de 45, 67,5 ou 90 V, diminuée avec la polarisation négative du tube de sortie.
Basiert auf einer Batteriesp. von 45, 67,5 oder 90V, verringert mit der neg. Vorsp. der Endröhre

[2]) See page 3; voir page 3; siehe Seite 3.

Typical characteristics of the oscillator section (g1 connected to +f)
Caractéristiques types de la partie oscillatrice (g1 connecté à +f)
Kenndaten des Oszillatorteiles (g1 verbunden mit +f)

V_a	=	41	63,5	85	V
V_{g4}	=	41	63,5	60	V
V_{g3}	=	0	0	0	V
V_{g2}	=	29	30	30	V
I_{g2}	=	3	2,2	2,5	mA
S_{g2g1}	=	1,1	0,8	0,9	mA/V
μ_{g2g1}	=	9	7,5	7,5	

Limiting values
Caractéristiques limites
Grenzdaten

V_b	= max.	120	V	
V_b	= max.	140	V	3)
V_a	= max.	90	V	
W_a	= max.	0,2	W	
V_{g4}	= max.	90	V	
W_{g4}	= max.	0,1	W	
V_{g2}	= max.	60	V	
W_{g2}	= max.	0,2	W	
I_k	= max.	4	mA	
R_{g3}	= max.	3	MΩ	
V_{g1} (I_{g1}=+0,3μA)	= max.	-0,2	V	

2) With self-excitation S_c will be a few percent lower. In general grid tuning is recommended. Avec auto-excitation S_c sera plus petit de quelques percents. En général la syntonisation du circuit de la grille 1 est recommandé. Mit Selbsterregung wird S_c um einige Prozente kleiner sein. Im allgemeinen wird Abstimmung des ersten Gitterkreises empfohlen.

3) Absolute value; valeur absolue; Absolutwert.

Typical characteristics of the oscillator section (g1 connected to +f)
Caractéristiques types de la partie oscillatrice (g1 connecté à +f)
Kenndaten des Oszillatorteiles(g1 verbunden mit +f)

V_a	=	41	63,5	85	V
V_{g4}	=	41	63,5	60	V
V_{g3}	=	0	0	0	V
V_{g2}	=	29	30	30	V
I_{g2}	=	3	2,2	2,5	mA
S_{g2g1}	=	1,1	0,8	0,9	mA/V
μ_{g2g1}	=	9	7,5	7,5	

Limiting values
Caracteristiques limites
Grenzdaten

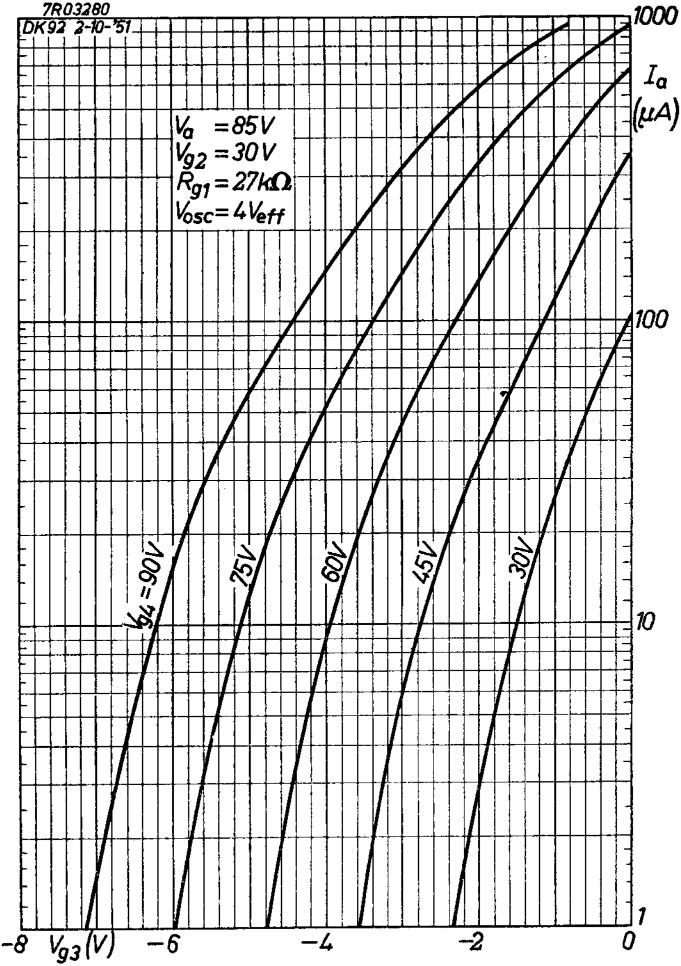
V_b	= max.	120 V
V_b	= max.	140 V [3])
V_a	= max.	90 V
W_a	= max.	0,2 W
V_{g4}	= max.	90 V
W_{g4}	= max.	0,1 W
V_{g2}	= max.	60 V
W_{g2}	= max.	0,2 W
I_k	= max.	4 mA
R_{g3}	= max.	3 MΩ
$V_{g1}(I_{g1}=+0,3\mu A)$	= max.	+0,75 V

[2]) With self-excitation S_c will be a few per cent smaller; in general grid-tuning is recommended

Avec auto-excitation S_c sera plus petit de quelques pour cents; en général la syntonisation du circuit de la grille 1 est recommandé

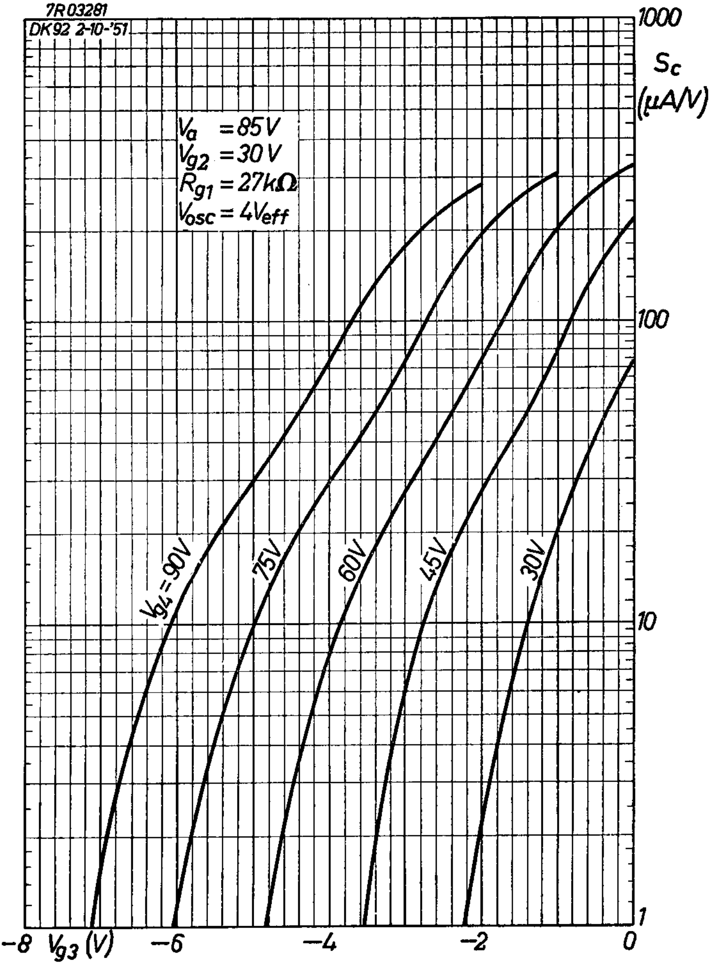
Mit Selbsterregung wird S_c um einige Prozente kleiner sein; im allgemeinen wird Abstimmung des ersten Gitterkreises empfohlen

[3]) Absolute value; valeur absolue; Absolutwert


7R03280
DK92 2-10-'51
$V_a = 85V$
$V_{g2} = 30V$
$R_{g1} = 27k\Omega$
$V_{osc} = 4V_{eff}$
I_a (μA)
1000
100
10
1
$V_{g4} = 90V$
75V
60V
45V
30V
-8
V_{g3} (V)
-6
-4
-2
0

DK92

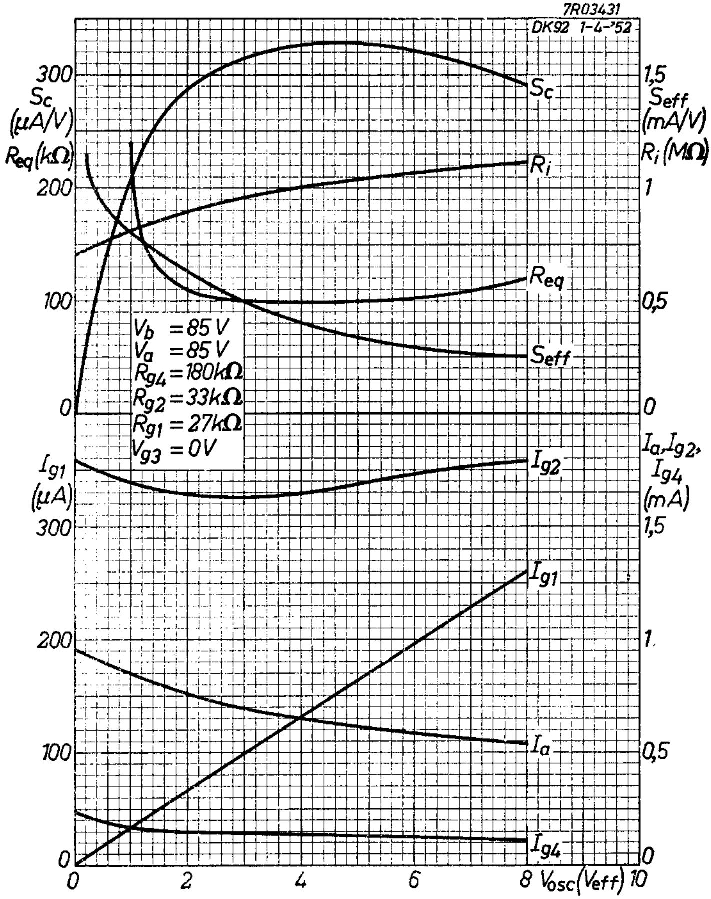
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B

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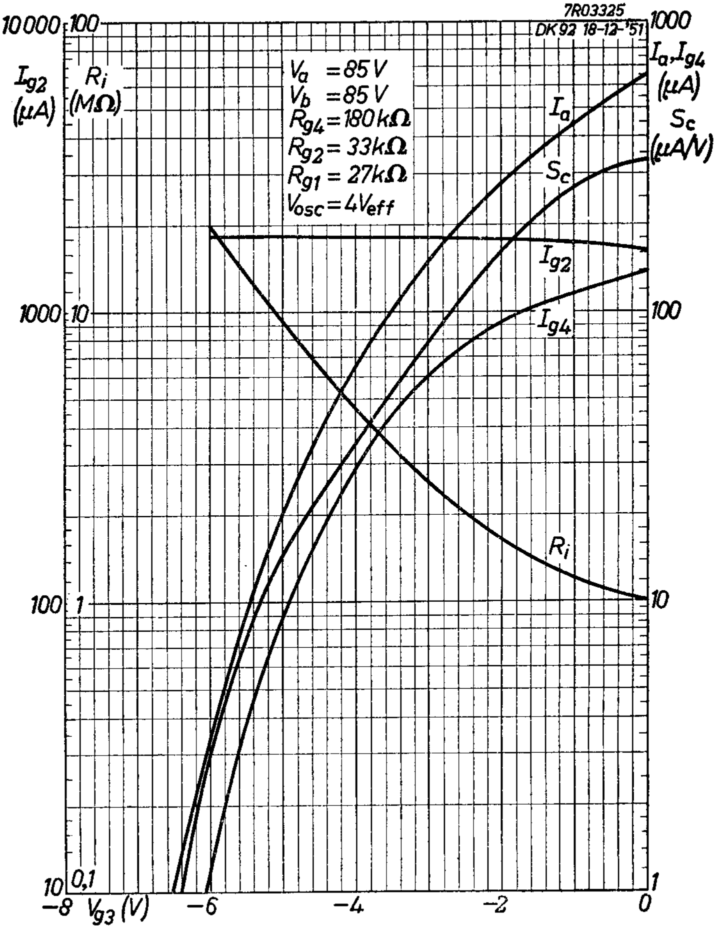
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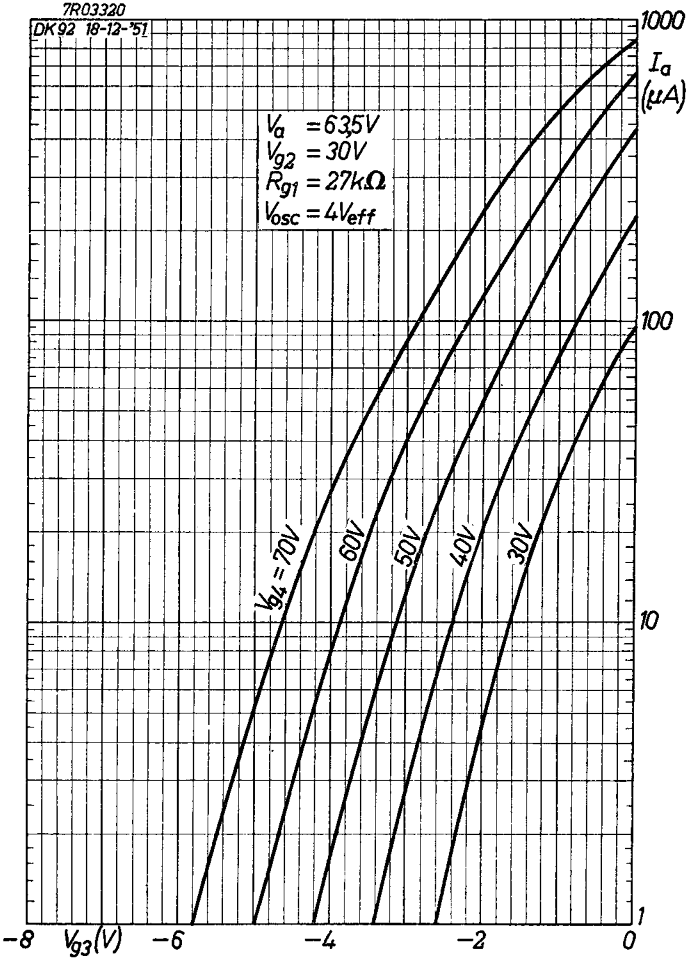


4.4.1952

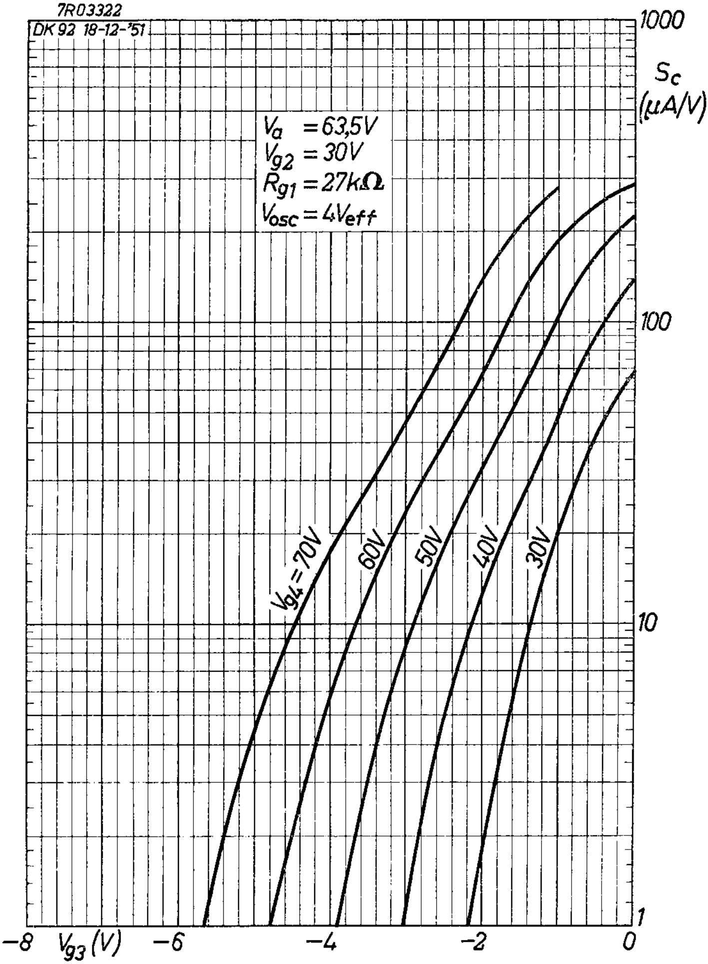
C

PHILIPS

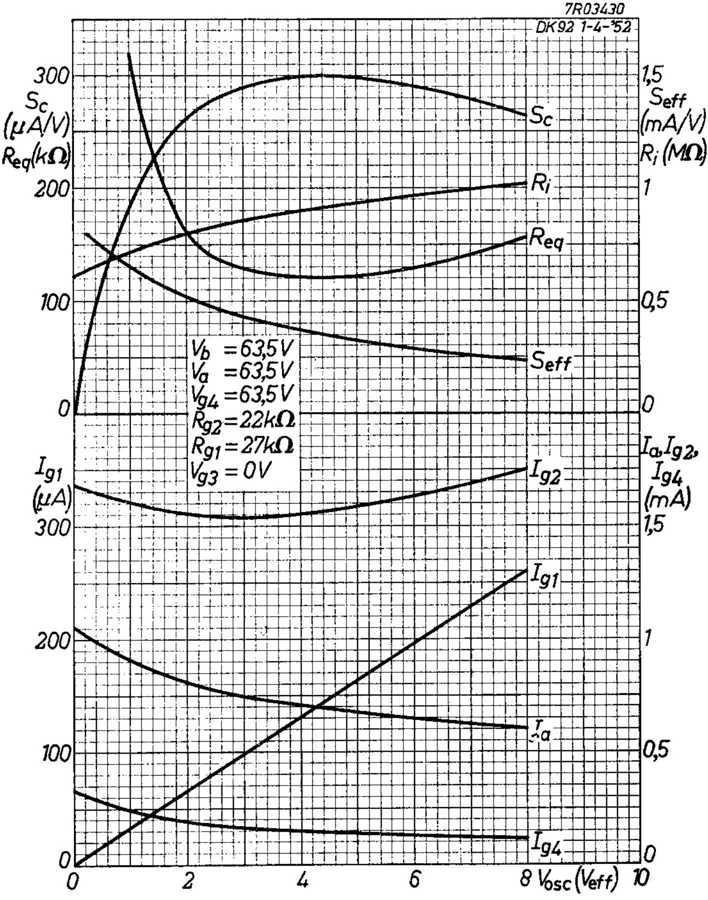

7R03325
DK92 18-12-'51
V_a = 85 V
V_b = 85 V
R_{g4} = 180 kΩ
R_{g2} = 33 kΩ
R_{g1} = 27 kΩ
V_{osc} = 4 V_{eff}
I_{g2} (μA)
R_i (MΩ)
I_a, I_{g4} (μA)
S_c (μA/V)
I_a
S_c
I_{g2}
I_{g4}
R_i
10 000
1000
100
10
100
10
1
0,1
1000
100
10
1
−8
V_{g3} (V)
−6
−4
−2
0


7R03320
DK92 18-12-'51
V_a = 63,5V
V_{g2} = 30V
R_{g1} = 27kΩ
V_{osc} = 4V_{eff}
I_a (μA)
1000
100
10
1
V_{g4} = 70V
60V
50V
40V
30V
−8
V_{g3}(V)
−6
−4
−2
0

DK92 PHILIPS

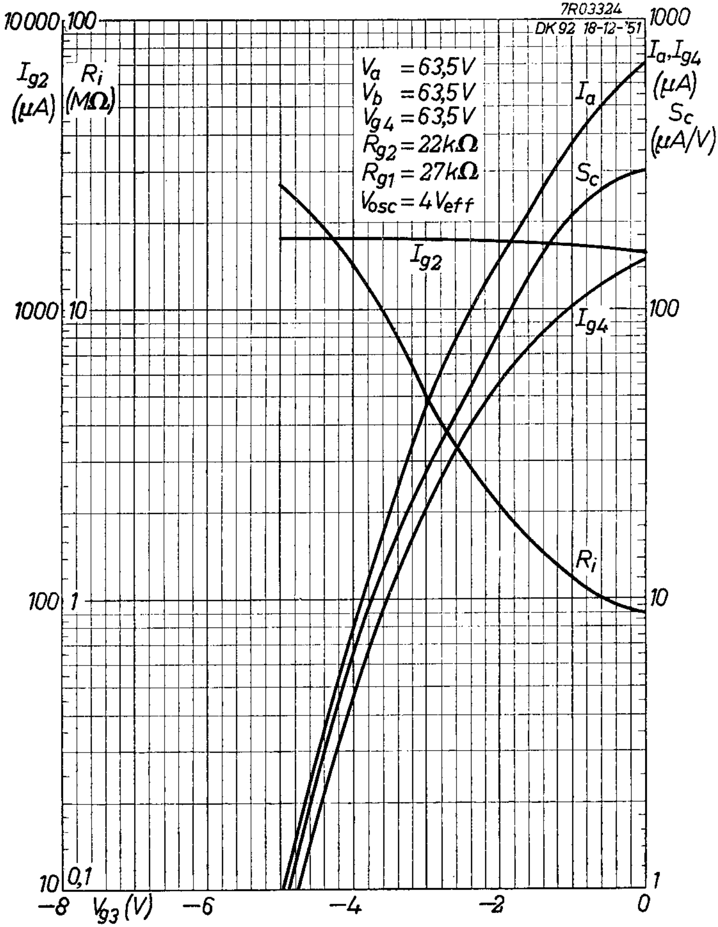


F

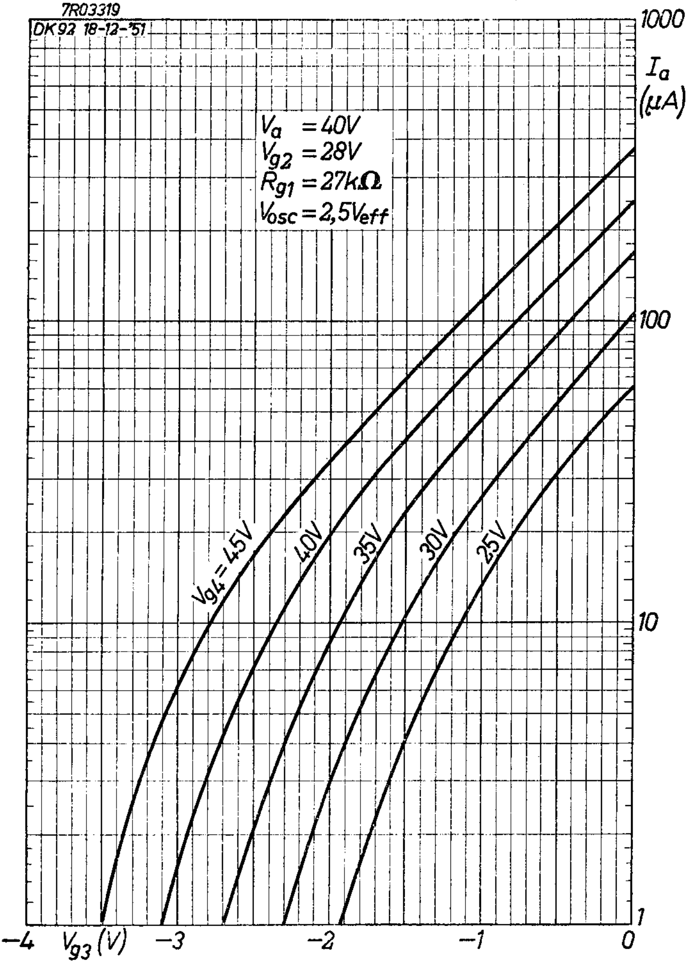

7R03430
DK92 1-4-'52
300
S_c
(μA/V)
R_{eq}(kΩ)
200
100
0
I_{g1}
(μA)
300
200
100
0
1,5
S_{eff}
(mA/V)
R_i (MΩ)
1
0,5
0
I_a, I_{g2},
I_{g4}
(mA)
1,5
1
0,5
0
S_c
R_i
R_{eq}
S_{eff}
I_{g2}
I_{g1}
I_a
I_{g4}
V_b = 63,5 V
V_a = 63,5 V
V_{g4} = 63,5 V
R_{g2} = 22 kΩ
R_{g1} = 27 kΩ
V_{g3} = 0 V
0
2
4
6
8 V_{osc} (V_{eff})
10

DK92

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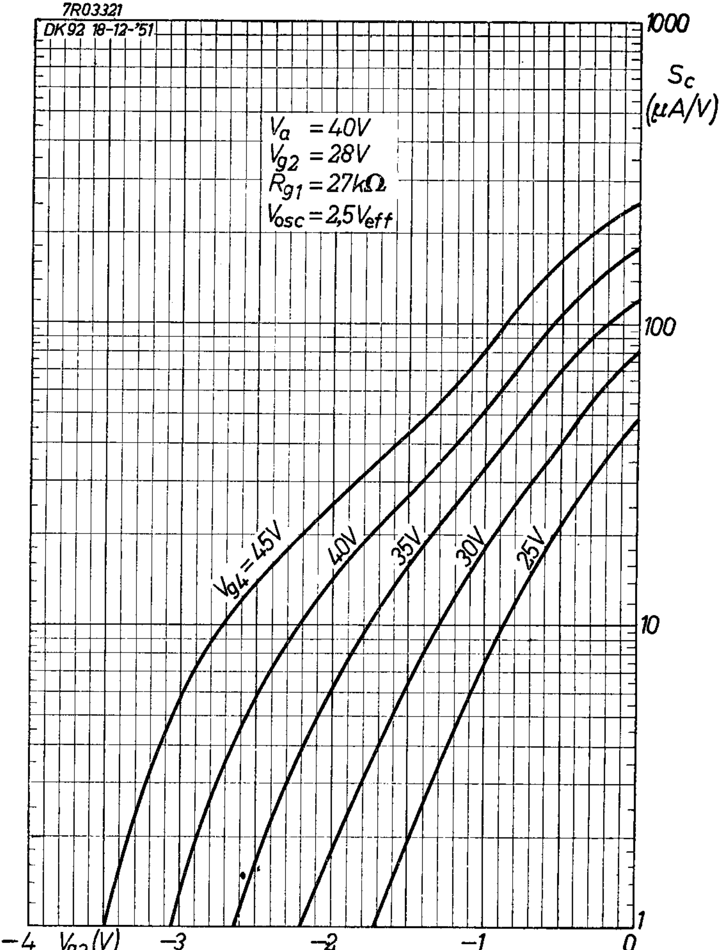


H

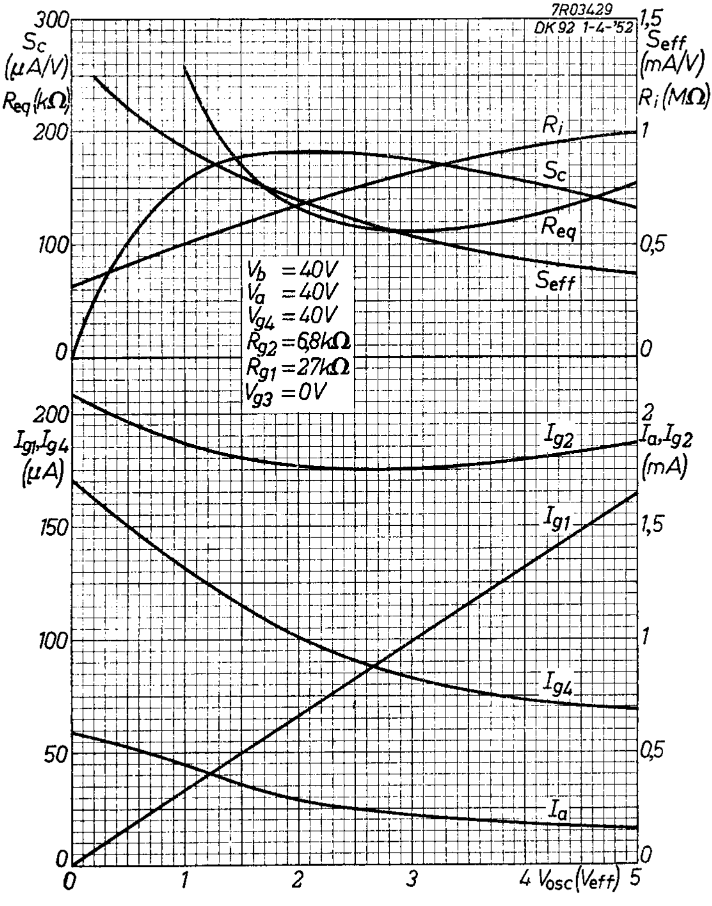

7R03319
DK92 18-12-'51
1000
I_a (μA)
$V_a = 40V$
$V_{g2} = 28V$
$R_{g1} = 27k\Omega$
$V_{osc} = 2,5V_{eff}$
100
10
1
$V_{g4} = 45V$
40V
35V
30V
25V
−4
V_{g3} (V)
−3
−2
−1
0

DK92

PHILIPS

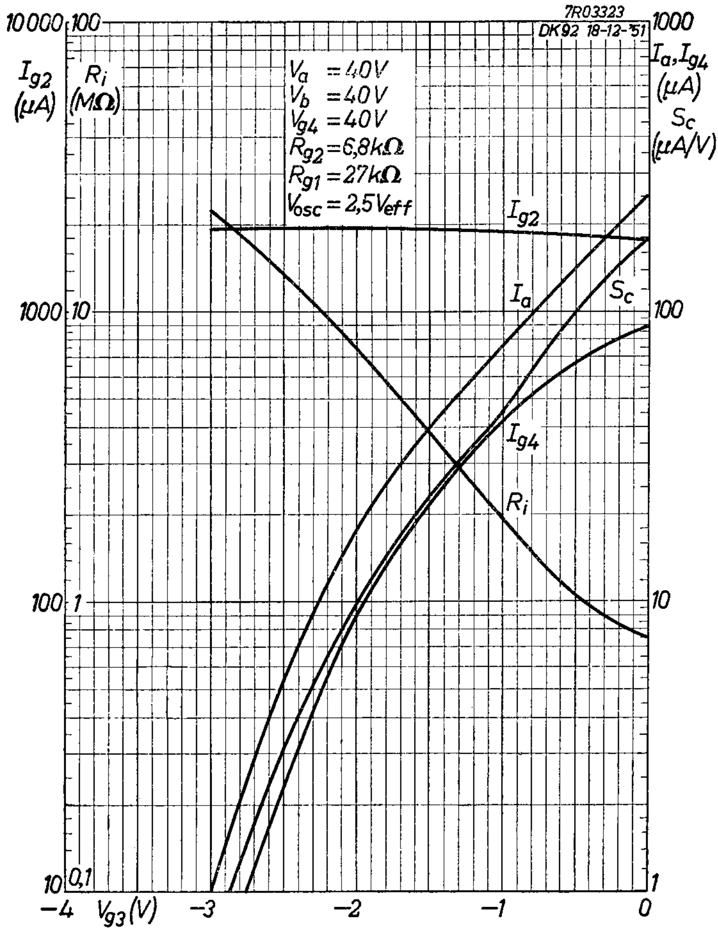


J


7R03429
DK 92 1-4-'52
300
Sc
(μA/V)
Req (kΩ)
200
100
0
1,5
Seff
(mA/V)
Ri (MΩ)
1
0,5
0
Ri
Sc
Req
Seff
Vb = 40V
Va = 40V
Vg4 = 40V
Rg2 = 6,8kΩ
Rg1 = 27kΩ
Vg3 = 0V
200
Ig1, Ig4
(μA)
150
100
50
0
2
Ia, Ig2
(mA)
1,5
1
0,5
0
Ig2
Ig1
Ig4
Ia
0
1
2
3
4 Vosc (Veff)
5

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L

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Electronic Tube

HANDBOOK

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